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AMOS BURG

FOUR CENTURIES AGO THE ANCESTORS OF THIS MEDELLÍN SENORITA CAME TO NEW GRANADA (COLOMBIA) TO SEEK THEIR FORTUNES IN THE NEW WORLD (Bulletin No. 3)

Bulletin No. 1, November 17, 1947

Rangoon, Burma Capital, Is Buddhist "Mecca"

IN RANGOON, the capital and chief port of soon-to-be independent Burma, other nationalities have long outnumbered the native Burmese.

Before World War II, the half-million people surging along Rangoon's geometrically laid-out streets included 160,000 Burmese to more than 250,000 Indians, 40,000 Chinese, and thousands of Japanese and other nationalities. These people of varied races hailed from all over the world—anywhere from Singapore to New York.

Oriental Atmosphere Lingers Despite Postwar Reconstruction

Rangoon ranked as the third seaport of British India (of which it was a part until 1937), headed only by Calcutta and Bombay. Rated the Orient's greatest rice-exporting center, this city, with its international trade in oil, timber, and strategic metals, was badly battered during the war. Destruction had come to Rangoon before in several disastrous fires, so it was not actually an ancient city.

The greatest war damage occurred in the harbor area. In spite of rebuilding and repairs, Rangoon retains an Oriental flavor in temples and pagodas, towered and balconied buildings, tropical gardens, jogging rickshas, and bazaars with their silks and silver, lacquer and wood carvings.

Although Western styles have been widely adopted, many Burmese men and women still wear the national costume of printed material, gracefully draped and reaching to the ankles.

Rudyard Kipling, in the "Song of the Cities," tells of Rangoon's famous gold and jeweled Buddhist shrine, the Shwe Dagon (illustration, next page). Pure, gleaming gold, it towers above the city and casts its spell under heat-shimmering sun or muted, luminous moonlight.

The Shwe Dagon is of particular veneration to Buddhists as the only pagoda known to have actual relics of Gautama. In addition to eight hairs of this most-reverenced of all buddhas, there are relics of three of his predecessors. Faithful Buddhists from Indochina, Siam, Ceylon, and Korea, as well as from all parts of Burma, make pilgrimages to the Shwe Dagon. The gold which covers its brick is renewed in every generation by contributions from pious members of the sect.

Was Once a Fishing Village

In a Rangoon hotel Kipling is believed to have written his much-quoted poem, "Mandalay." The "tinkly temple bells" he mentions are echoed by the Shwe Dagon chimes, stirred to music by the slightest breeze.

Although the Shwe Dagon has made it a holy place to Buddhists for generations, Rangoon was a mere fishing village when, in 1753, the Emperor Alompra undertook to rebuild it. He named it Yan Gon, meaning "end of war." In spite of its Oriental atmosphere and inhabitants, Rangoon is now a modern city and, in many ways, considerably Westernized. When the British took over in 1852, the town was replanned, with

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ST. JOSEPH LEAD CO.

A DANGLING MINER SENDS LOOSE, LEAD-RICH ROCKS TO THE BOTTOM OF A "STOPE"

The "roof miner's" job is to pry slabs loose and let them fall where they can be loaded onto cars below. In lead-mine parlance, a stope is a man-made domed cavity from which ore is taken. This one, 80 feet high, is in a mine in southeast Missouri (Bulletin No. 4).

Bulletin No. 2, November 17, 1947

Rhine's Low Water Halts Essential Traffic

A RECORD drop in water level on the Rhine recently stopped commercial shipping on that historic river, depriving Europe temporarily of one of its longest and most important communication routes.

The legend-haunted stream, famous in war and peace, flows for more than 800 miles from the head of navigation at Basel, Switzerland, to its many-branched delta on the North Sea.

More than Half of Switzerland's Trade Is Riverborne

In its course, the Rhine floats the commerce of five nations—Switzerland, Germany, France, the Netherlands, and—by merging canals and railway links—Belgium.

For landlocked Switzerland, this water highway to the sea is especially valuable. More than half of that small mountain republic's foreign trade, including nearly all its essential imports of raw materials, normally is carried by river barges. Metal for Switzerland's famous watches, leather for luxurious shoes, fabrics to be adorned with the embroidery for which the country is noted, must all be brought in from abroad to be transformed into the expensive exports which combine with the tourist business to maintain Switzerland's prosperity.

Starting in the clear, cold springs of the Swiss Alps, the Rhine, in its upper reaches, twists through a land of glaciers and giant peaks. On its way to the sea, it forms part of the boundaries between Switzerland and tiny Liechtenstein and Austria.

At the far-inland port of Basel, the Rhine marks the junction of France, Switzerland, and Germany. From this point the river plunges northward through a steep cleft in the earth's surface known as the Great Rhine Rift. Overlooked by somber, forested heights, this rift valley is wide enough for fertile farms and industrial cities. Railways follow the river and branch out across its bridges. The valley has often been a battleground between French and German forces. It was fought over in both World War I and World War II.

Remagen Marks First American Crossing in World War II

Between the old German towns of Bingen and Bonn, approaching Cologne (Köln), the narrowed gorge of the middle Rhine stretches past terraced vineyards (illustration, next page) and cliffs crowned with cathedrals and castles. On rocky heights stand the medieval strongholds of robber barons. Rising from the water are the rocks where the legendary Lorelei sings to lure fishermen to destruction.

It was at Remagen, in this region steeped in legend and history, that American troops added another chapter to that history when they crossed the Rhine—the first American forces to do so—during the final phases of World War II.

Still farther north, toward the broad, open plains of the Low Countries—Belgium and the Netherlands—the river taps Germany's "black" Ruhr district. Before World War II ended, tall smokestacks towered

long, straight streets crossing at right angles. Gradually, the business and administrative districts were built up and suburbs developed, with European-style bungalows set among luxuriant tropical gardens. Streets were paved; electricity, hotels, clubs, a university, golf course, and race track brought a 20th-century atmosphere to the city.

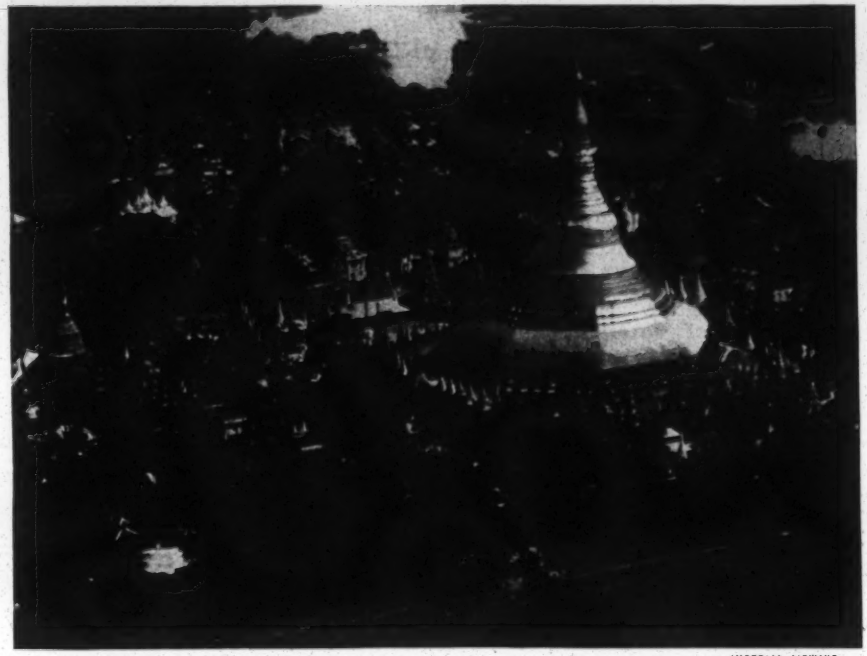
In predominantly agricultural Burma, Rangoon is by far the largest metropolitan center. Through its port normally flows more than four-fifths of Burma's entire trade.

Down the great central artery of the country, the Irrawaddy River, inland Burma ships to Rangoon oil, tin, tungsten, silver, cotton, and rubber. "Elephints a-pilin' teak in the sludgy, squdgy creek" is as typical a labor in today's Burma as it was in the days when Kipling wrote his tales of British India.

NOTE: Rangoon is shown on the National Geographic Society's map of India and Burma. Write the Society's headquarters, Washington 6, D. C., for a price list of maps.

For further information, see "Stilwell Road—Land Route to China," in the *National Geographic Magazine* for June, 1945; "Aerial Invasion of Burma," August, 1944*; "Burma: Where India and China Meet," October, 1943*; and "Burma Road, Back Door to China," November, 1940. *(Issues marked with an asterisk are included in a special list of Magazines available to teachers in packets of ten for $1.00.)*

See also, "Burma to Choose New Political Status," in the GEOGRAPHIC SCHOOL BULLETINS, Feb. 3, 1947; and "War-Racked Burma Outgrows Its Poetic Reputation," Feb. 5, 1945.



IMPERIAL AIRWAYS

TOPPING A 168-FOOT HILL, THE SHWE DAGON POINTS A JEWELED FINGER SKYWARD

The pagoda is said to have been originally only 27 feet high but has attained its present 368 feet by repeated applications of bricks and gold. It has not changed in shape for the past four centuries. Smaller pagodas pierce the greenery that cloaks the hill. In the distance, the Royal Lakes mirror the shrubs and flowers of Dalhousie Park, named in honor of a former governor-general.

Bulletin No. 3, November 17, 1947

Colombia's Chocó Has Platinum, Gold, Rain

IN the tropical Chocó region of Colombia, promoted from territory to department, or state, rank, nature compensates for heavy rains by providing waterproofing from wild rubber trees.

Stretching along Colombia's Pacific coast from just north of Buenaventura to the Panama border, the hot, steamy Chocó—in many areas—receives rain nearly every day. Long ago the natives learned to keep dry by daubing clothing and coverings with the milky juice found in their forests.

In 1823 a visiting English captain remarked on the efficiency of the water-resistant liquid when applied to boots and hats. "I have no doubt," he said prophetically, "that this milk will some day be in great repute."

Threw Platinum Away

Gold and platinum, however, turned out to be the important exportable wealth of the Chocó region.

At first only gold was considered of value. The native Indians and early Spanish adventurers, panning the rich gravels of the San Juan and Atrato rivers, treasured the yellow grains and threw the white ones away. As they tossed the platinum back into the water, some thought it would ripen into gold.

After the modern discovery of the many industrial as well as decorative uses of platinum, increased output from the Chocó region raised Colombia for a time to the position of the world's second-ranking producer, after Russia.

The Chocó area—worked now by giant dredging machines—is still an important source of both platinum and gold. However, it has been surpassed in recent decades by newer operations in other countries.

People Lead Simple Lives

The Chocó is about half as large as Indiana. Its 111,000 inhabitants are almost entirely the descendants of Negro slaves. The latter were imported by the Spaniards for labor after most of the native Indians had died off or wandered away. Remnants of four Indian tribes live in the less accessible areas.

Aside from mineral activities, the sparsely settled Chocó has been little developed. In the marshy coastal lowlands and along inland rivers, the Chocó people lead a simple life, fishing and raising a few subsistence crops, or scratching in the stream gravels for grains and occasional nuggets of gold and platinum.

The scattered Indians have developed a grotesque type of pottery which is skillfully fashioned with the feet as well as the hands. The men bob their hair. Both men and women wear only loincloths except when they paddle down the coast to Buenaventura to sell their pineapples, cassava, corn, and fish (illustration, next page).

Awaiting development in the Chocó are a number of potentially valuable products, including hardwoods, rubber, and tagua, or ivory nuts.

Inland from the Chocó three parallel mountain ranges rise. On table-

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along its banks. Coal mines and power stations were the lifeblood of the Ruhr plants which supplied Germany with her munitions for two world wars. Smoke from the factories of Essen, Dortmund, Düsseldorf, and many other industrial cities blackened the landscape.

The greater portion of the Rhine's commercial shipping is made up of bulk cargoes of coal, iron, steel, and grain. From the reviving industrial centers along the river's long course come manufactured goods of many kinds. Shiploads of fruit, wines, vegetables, cattle, and dairy products add to the tremendous tonnage that normally travels the Rhine from the mountains to the sea.

NOTE: The course of the Rhine may be traced on the Society's map of Germany and Its Approaches.

For additional information about the historic river, see "What I Saw Across the Rhine," in the *National Geographic Magazine* for January, 1947; "War's Wake in the Rhineland," July, 1945*; "Cologne, Key City of the Rhineland," June, 1936; and "Rediscovering the Rhine," July, 1925.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, October 8, 1945, "Kiel Canal and Rhine River Long Served International Trade"; "Scenes of Rhineland Myths Are Today's Battlegrounds," April 9, 1945; "Fallen Cologne Was Metropolis of Western Germany," March 26, 1945; and "Historic Rivers Make New History: Rhine—Danube," October 23, 1944.

DR. PAUL WOLFF FROM EUROPEAN

ON THE STEEPLY TERRACED RHINE BANK OPPOSITE BINGEN AND ITS MOUSE TOWER, WOMEN OF RÜDESHEIM HARVEST THE GRAPES IN VINEYARDS DATING FROM THE TIME OF CHARLEMAGNE

Bulletin No. 4, November 17, 1947

U. S. Seeks New Sources of Lead Supply

SCIENTIFIC sleuths are looking for new sources of lead in the United States and Alaska.

Although mines in Missouri (illustration, inside cover), Idaho, Utah, and 15 other states continue to keep the United States far out front in world production of the heavy metal, the postwar industrial demand is greater than the supply.

In simple arithmetic, the United States normally mines less than one-third but consumes half the world's lead. Object of the search by the Bureau of Mines is to increase the domestic reserve so that the nation will be less dependent on lead imports.

Australia, Mexico, Canada Follow United States

Consumption for 1947, estimated at more than 1,000,000 tons, equals the wartime peak and constitutes more than half of world production. Miners are finding it profitable to work low-grade ores and to employ reclamation methods that were uneconomical at lower market prices.

The United States took over the top production position from Spain half a century ago. Following the leader in pre-Pearl Harbor output of lead were Australia, Mexico, Canada, Soviet Russia, Germany, Burma, and Yugoslavia.

More than half the domestic ore is taken from the Missouri-Oklahoma-Kansas field, where huge "chat" piles—the waste from lead and zinc mines—cover the landscape like small, bare mountains. One-fifth of the country's total comes from the Coeur d'Alene district of Idaho's panhandle. Lead is mined commercially as far east as New York and Virginia. Galena —lead sulphide—commonest of several ores, has given its name to towns in five states and Alaska.

Lead is often found in ores that also contain silver. Leadville, Colorado, famous for a silver boom in the last century, was named for this lead-silver ore.

Connection Between Plumber and Lead

Bluish-gray, soft, highly resistant to corrosion, lead is used in the greatest volume in electrical and chemical fields. Storage batteries and electrical cable coverings account for nearly half the United States consumption. The third big use is in lead paints.

Solder is an alloy of lead and tin. The plumber, who would be lost without lead pipe and solder, takes his name from the Latin *plumbum*, meaning lead. From this word comes the metal's chemical symbol, Pb.

Culture gathered speed with the spread of books and newspapers printed from type metal of lead, hardened by alloying with antimony. On the other hand, wars are fought with lead bullets, shot, and shrapnel.

Lead (tetraethyl) adds zip to gasoline motor fuel. It puts sparkle into optical and decorative glass. Considerable tonnage is used in making foils and collapsible tubes. Alloyed with bronzes and brasses, lead makes them easier to machine.

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lands three to nine thousand feet high among these ranges live most Colombians. The two leading cities, Bogotá and Medellín, though near the Equator, have temperate climates because of their altitude. Many families of pure Spanish stock (illustration, cover), descended from the original colonists, live in these interior plateaus.

NOTE: The Chocó region of Colombia may be located on the Society's map of South America.

For further information, see "Cruising Colombia's 'Ol' Man River'," in the *National Geographic Magazine*, May, 1947; and "Hail Colombia!" October, 1940.

See also, in the GEOGRAPHIC SCHOOL BULLETINS, February 8, 1943, "Variety Marks Two-Ocean Colombia."

AMOS BURG

DUGOUT CANOES IN BUENAVENTURA'S HARBOR TELL THAT IT'S MARKET DAY FOR CHOCÓ INDIANS

In these hand-hewn boats, the aborigines navigate rough coastal seas to bring their fish and fruit to the buyers of Columbia's largest Pacific port. Planks fastened above the gunwales keep waves from breaking over. On the floor of the large canoe at the right is a fitting for a mast.

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Bulletin No. 5, November 17, 1947

Junagadh Is Moslem-Ruled Hindu Princedom

THE Princely State of Junagadh has been a focus of recurring India-Pakistan unrest since the two new dominions were recently established. Dominion of India forces surrounded it after its Moslem ruler had moved to join Pakistan.

The tiny princedom contains the last stronghold of the Indian lion. This vanishing beast—often the prey of tigers—roams the interior hills of Junagadh, a wooded upland that stands out in the generally flat, dry, and barren Kathiawar Peninsula about halfway between the cities of Bombay and Karachi.

Complicated Geography Creates Enclaves

Junagadh, which faces the Arabian Sea along the southern coast of this peninsula, has its back to a bloc of small states affiliated with the Dominion of India. Two hundred miles separate the Junagadh border from the nearest Pakistan territory on the north.

So complicated is political geography in this part of the world that there are enclaves, or islands, of Junagadh territory inside nearby states, while land of others is found within Junagadh.

Though smaller than Connecticut, Junagadh outranks in size most of the other subdivisions of the Kathiawar Peninsula. About four-fifths of the princedom's nearly 700,000 people follow the Hindu faith predominant in the adjoining states.

Their Moslem prince, His Highness the Nawab Saheb, is the seventh descendant to succeed the founder of the Babi royal house, which took over control of the state about 1735. Former treaty relations with the British government, established back in 1807, had left the state more or less independent.

In its long and often violent history, Junagadh has been under the rule of both Hindu and Mogul conquerors and kings. Its chief city and capital, also named Junagadh, is famous for its religious and architectural antiquities.

Buddhist Caves and Jain Temples

Sprawled over the slopes of Girnar, the sacred mountain, the city attracts students and travelers, as well as the faithful of various Indian sects who make pilgrimages to its shrines and tombs, temples and mosques (illustration, next page).

Among the exhibits in and around Junagadh are the starkly simple caves of the ancient ascetic Buddhists and the ornate domed and spired temples of the Jains. Dissenting from Hinduism, the Jain sect has made the Girnar Hills one of its religious centers. The marble temples contain gold, jewels, and the huge black-granite boulder of Asoka, on which the king's edicts were carved more than 200 years before Christ. Jains are often traders, and they live in cities all over India and Pakistan. Its wealth makes the small sect important.

In spite of near-desert conditions in many spots, the numerous states

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Lead has figured in coinage for 4,000 years. Lead pipe and projectiles have been uncovered by archeologists in many parts of the world and are dated as far back as Roman times.

Romans wore leaden knuckles to aid in hand-to-hand fighting. Greek gamblers had a trick of loading dice with pellets of the heavy metal. Lead caskets, new to the present age, served captains and kings in medieval times. Colonial pewter is an alloy of lead and tin.

NOTE: Regions where lead is mined in the United States may be located on the Society's map of The United States of America.

For additional information, see "Land of a Million Smiles," in the *National Geographic Magazine* for May, 1943*; and "Metal Sinews of Strength," April, 1942.

WILLIAM M. RITTASE

IN A LEAD REFINERY HE KEEPS THE PLATTER CLEAN WITH A NINE-FOOT SPOON

The next step, after skimming off impurities, is pouring the pure molten metal into moulds. Hardened, these casts of pig lead are the marketable form.

LIVING IS EASY ON FERNANDO POO

NATURE is bountiful on Fernando Poo, lofty island in Africa's Gulf of Guinea corner where one of the world's most powerful radio stations is being built.

Consequently, some 20,000 brown-skinned natives of this Spanish island close to the Equator live easily in the highlands, untempted by wages offered for work in the humid coastal cacao plantations.

Fernando Poo, covering less than half as much area as Long Island, New York, holds numerous wooded peaks 4,000 to 10,000 feet high. Volcanic in origin, it is an outcropping—20 miles offshore in the Bight of Biafra—of a mainland mountain chain.

The island's name, strange to American ears, is that of its Portuguese discoverer, who lived in the time of Columbus. Ceded by Portugal to Spain in 1778, it has some English-speaking coast dwellers as a result of a period of British administration from 1827 to 1844.

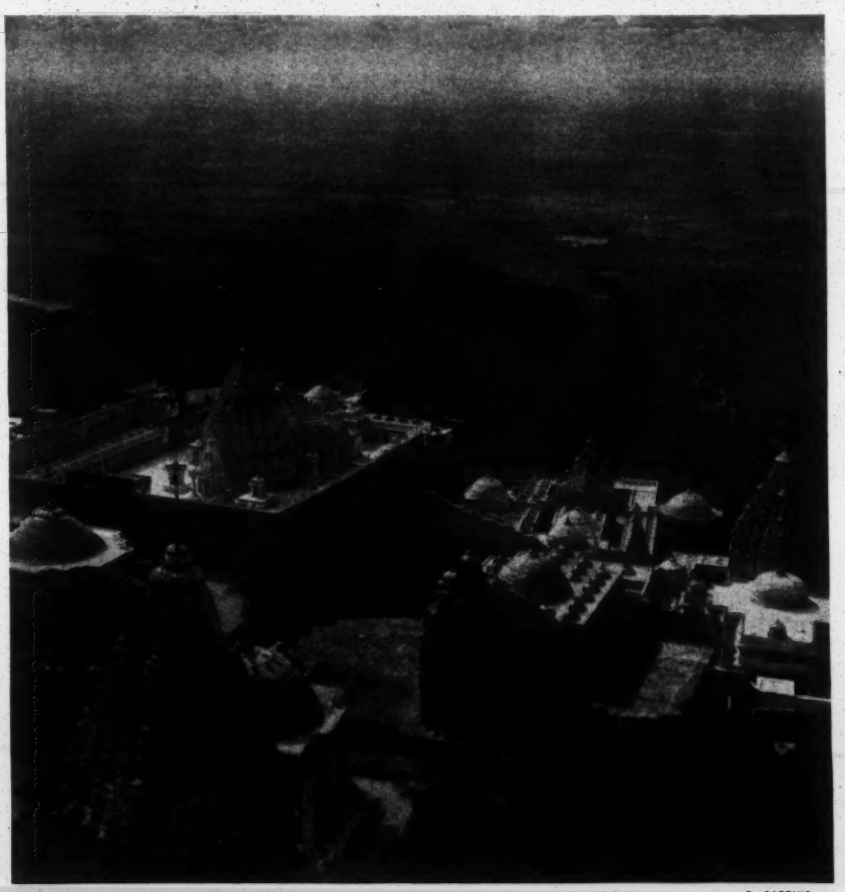
In places, Fernando Poo's 65,000-acre coastal cacao belt is the most productive in West Africa. From this island, cacao growing spread to near-by shores which normally ship about 400,000 tons of cacao annually.

of Kathiawar Peninsula have developed many small industries. Cotton grown in the region is processed there, and salt is evaporated from sea water in great coastal pans.

Junagadh normally is a relatively prosperous region, where production ranges from cotton, rice, wheat, and sugar cane to building stone, tobacco, timber, and coconuts. In crowded bazaars patient salesmen tempt passers-by with gold and silver embroideries, copper and brassware, candies, aromatic seeds, and fine bamboo furniture.

NOTE: Junagadh may be located on the Society's map of India and Burma.

For additional information, see "India—Yesterday, Today, and Tomorrow," in the *National Geographic Magazine* for October, 1943*.



R. RAFFIUS

GLITTERING, HEAVEN-GRAZING SPIRES AND DOMES OF JAIN TEMPLES CROWN JUNAGADH'S HILLS

Below spread the steamy plains of Kathiawar, a peninsula of west-central India. The dome farthest left is part of the Temple of Vastupala, built in 1177. The Jains, excellent workers in stone, originally adopted Buddhist architectural styles and later blended in many disguising Moslem features to save their temples from pillage by Mogul conquerors. Every Jain takes as many vows of abstention as do the priests of most religions. His prime commandment is "do not kill." True adherents cover their mouths with cloths to avoid destroying microscopic life in the air. Vermin found in homes are removed, not destroyed. It is literally true that a Jain "wouldn't kill a fly!"